

AMENDMENTS

In the Specification

Please amend the specification as follows:

Substitute the paragraph starting at page 1, line 7, with the following:

5 Modern, high-capacity data storage systems often utilize a plurality of
✓
a1 physical disk drives for redundant storage of data. This ~~arrangements~~
arrangement speeds data access as well as ~~protecting~~ protects against data loss
that might result from the failure of any single disk.

10 Substitute the paragraph starting at page 7, line 21, with the following:

Generally, all of the parity operations described above can be
accomplished by using a different combination of known coefficients chosen
from a base set having a finite number of such coefficients. These coefficients
include p_0 - p_{N-1} , q_0 - q_{N-1} , and the coefficients resulting from the transform
15 functions $f()$. Any particular parity operation utilizes a subset of these
coefficients, depending on the actual data or parity segment being calculated.
✓
a2 The particular subset of coefficients needed for a particular calculation depends
on both the classification of the operation and upon the specific data and/or
parity segments involved. Thus, within a given classification of a parity
20 operation, there are different situations or *scenarios*, each of which calls for a
different subset of coefficients. For example, one scenario occurs when adding
data segment x_5 to a stripe, when coefficients p_5 and q_5 are needed. Another
scenario occurs when adding data segment x_6 to a stripe, when coefficients p_6
and q_6 are needed.

Substitute the paragraph starting at page 8, line 11, with the following:

Fig. 3 shows a memory array 30 that contains a plurality of coefficient subsets 31. Each coefficient subset is a list or concatenation of pre-selected and/or pre-computed coefficients that are applied to corresponding segments of data to produce a parity computation result. In accordance with the invention, a different subset of coefficients is pre-selected and stored for each different operation scenario. The subsets are then formatted and packed in a linear memory array for reference and direct use by parity operation logic. Because different scenarios call for different numbers of coefficients, the subsets are not of the same length or size.

Substitute the paragraph starting at page 12, line 18, with the following:

As with the Classification 2 group, the first two parameters of each Classification 3 subset indicate whether the coefficients of the group are applicable to P calculations or to Q calculations. Each of these coefficients is set to either "0" or "1". A value of "1" for the first of these coefficients indicates that the subset coefficients apply to parity segment P. A value of "1" for the second of these coefficients indicates that the subset coefficients apply to involves parity segment Q.

Substitute the paragraph starting at page 14, line 15, with the following:

The fifth section of the array includes $(N*(N-1))/2$ pairs of such subsets, corresponding to every possible combination of a and b within the range of 0 to $N-1$. Note that in each subset, the coefficient $f(p_a, p_b, q_a, q_b)$ corresponds to data segment x_a or x_b , depending on which data segment is being reconstructed.

Substitute the paragraph starting at page 19, line 21, with the following:

1 A simultaneously filed and co-pending U.S. Patent Application No.
2 09/808,713 ~~attorney docket no. 10001494~~, entitled "Using Task Description
3 Blocks To Maintain Information Regarding Operations", to inventors Barry J.
4 Oldfield and Robert A. Rust, describes TDBs and their use, and is hereby
5 incorporated by reference.

Substitute the paragraph starting at page 20, line 1, with the following:

6 Other simultaneously filed and co-pending U.S. Applications describe
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8
9
10 technologies useful in conjunction with the invention, including U.S. Patent
11 Application No. 09/808,648 ^{now U.S. Patent No. 6,567,891} ~~attorney docket no. 10001489~~,
12 ¹ entitled "Methods
13 And Arrangements For Improved Strip-Based Processing", to inventors Barry
14 J. Oldfield and Robert A. Rust; U.S. Patent Application No. 09/808,711
15 ~~attorney docket no. 10001493~~, entitled "Memory Manager for a Common
16 Memory", to inventors Barry J. Oldfield and Robert A. Rust; and U.S. Patent
17 Application No. 09/808,910 ^{now U.S. Patent No. 6,687,872} ~~attorney docket no. 10001491~~,
18 ¹ entitled "Efficient
19 Parity Operations," to inventors Michael B. Jacobson, Barry J. Oldfield and
20 Robert A. Rust[[:]]. These applications are hereby incorporated by reference.